

# EMMORTON RECREATION CENTER - TENNIS BARN REPAIRS

2213 OLD EMMORTON ROAD  
BEL AIR, MARYLAND 21015

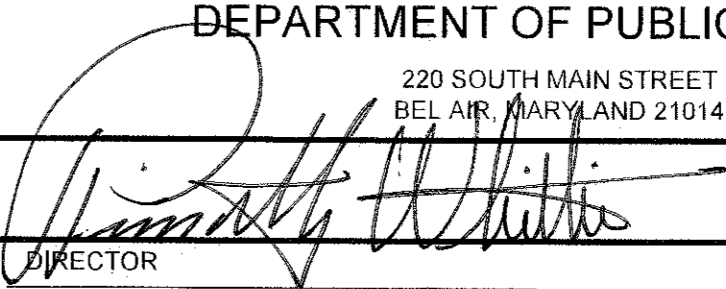
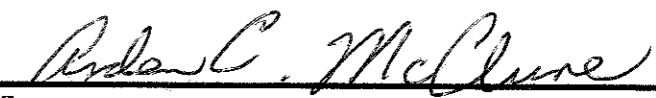
## HARFORD COUNTY PROJECT NO.: 13-231

STRUCTURAL  
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### DRAWING LIST


- GENERAL
- T-001 TITLE SHEET
- STRUCTURAL
- S001 GENERAL NOTES AND SCHEDULES
- S100 DEMOLITION PLAN
- S101 ROOF FRAMING PLAN
- S201 TRUSS ELEVATIONS
- S301 SECTIONS AND DETAILS

APPROVED: HARFORD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS 220 SOUTH MAIN STREET BEL AIR, MARYLAND 21014	
	6-2-13
DIRECTOR	DATE
ATTENTION: TIMOTHY F. WHITTIE, P.E.	
APPROVED: HARFORD COUNTY, MARYLAND DEPARTMENT OF PARKS AND RECREATION 702 NORTH TOLLGATE ROAD BEL AIR, MARYLAND 21014	
	6-6-13
DIRECTOR	DATE
ATTENTION: ARDEN C. MCCLUNE	

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SHEET TITLE

TITLE SHEET

ISSUED FOR CONSTRUCTION

ISSUE DATE	05.31.2013
DRAWN	DESIGNED
RDM	RAB
CHECKED	RAB

SCALE

AS NOTED

PROJECT NO. 121282.00

DRAWING NO. 1 OF 6

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GENERAL NOTES

DESIGN CRITERIA

1. THE DESIGN OF THE STRUCTURE IS IN ACCORDANCE WITH IBC 2012.
2. DESIGN LIVE LOADS:

COLLATERAL LOAD

1.0 PSF

CONCENTRATED

12.0 PSF
3. SNOW LOADING:

A. GROUND SNOW LOAD (Pg): 25 PSF

B. FLAT ROOF SNOW LOAD (Pf): 20

C. SNOW EXPOSURE FACTOR (Ce): 0.9

D. SNOW LOAD IMPORTANCE FACTOR (Is): 1.0

E. THERMAL FACTOR (Ct): 1.2

F. ADDITIONAL LOADING DUE TO DRIFTING SNOW AND SLIDING SNOW HAS BEEN DESIGNED FOR WHERE APPLICABLE.
4. WIND DESIGN DATA:

A. BASIC WIND SPEED (3-SECOND GUST): 115 MPH

B. WIND IMPORTANCE FACTOR (Iw): 1.0

C. WIND EXPOSURE(S): C

D. OCCUPANCY CATEGORY: II

E. INTERNAL PRESSURE COEFFICIENTS (GCpi): ±0.18.
5. EARTHQUAKE DESIGN DATA:N/A

MISCELLANEOUS

1. CONTRACTOR SHALL VERIFY CONDITIONS IN THE FIELD AND IMMEDIATELY NOTIFY ENGINEER OR ARCHITECT OF ANY CONDITIONS NOT AS SHOWN. CONTRACTOR SHALL TAKE FIELD MEASUREMENTS AS REQUIRED.
2. CONTRACTOR SHALL COORDINATE DETAILING, FABRICATION AND ERECTION WITH ALL RELATED TRADES PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. ALL SHOP DRAWINGS USED FOR WORK SHALL BEAR THE STAMP OF THE ARCHITECT/ENGINEER. NO SHOP DRAWINGS SHALL BE USED WHICH ARE MARKED "REVISE AND RESUBMIT", "REJECTED", "RETURNED FOR CORRECTION", OR WORDS TO THAT EFFECT.
3. ALL STRUCTURAL WORK SHALL BE COORDINATED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND PLUMBING REQUIREMENTS. DISCREPANCIES AND/OR INTERFERENCES SHALL BE REPORTED TO THE ARCHITECT.
4. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR UPON WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
5. THE DESIGN LIVE LOADS SHALL NOT BE EXCEEDED DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SHORING AND/OR BRACING DURING CONSTRUCTION TO ACCOUNT FOR ALL LOADING, INCLUDING BUT NOT LIMITED TO GRAVITY, WIND, EARTHQUAKE, EARTH AND CONSTRUCTION LOADING. BRACING MEMBERS SHOWN ARE THOSE REQUIRED FOR THE FINISHED STRUCTURE AND MAY NOT BE ADEQUATE FOR CONSTRUCTION LOADS.

DEMOLITION NOTES

1. REMOVE EXISTING CONSTRUCTION AS NOTED OR SHOWN ON PLANS. SEE SECTIONS AND DETAILS FOR EXTENT OF WORK TO BE REMOVED. EXISTING STRUCTURAL STEEL FRAMING SHALL REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
2. IF FIELD CONDITIONS DIFFER FROM THOSE SHOWN ON DRAWINGS, NOTIFY STRUCTURAL ENGINEER BEFORE PROCEEDING WITH DEMOLITION.

EXISTING CONSTRUCTION

1. ALL DIMENSIONS AND ELEVATIONS OF EXISTING STRUCTURES SHOWN ON THE DRAWINGS ARE OBTAINED FROM AVAILABLE SOURCES, AND ARE NOT GUARANTEED TO BE TRUE AND EXACT. THE CONTRACTOR SHALL VERIFY THESE DIMENSIONS AND ELEVATIONS BY ACTUAL FIELD MEASUREMENTS PRIOR TO FABRICATION OF ANY MATERIALS AFFECTED AND PRIOR TO START OF WORK. REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER.

STRUCTURAL STEEL

1. STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-05) AISC SPECIFICATION FOR THE DESIGN OF STEEL HOLLOW STRUCTURAL SECTIONS (AISC-HSS).
2. STRUCTURAL STEEL MATERIALS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A. STRUCTURAL STEEL WIDE FLANGE SHAPES: A992 HAVING A MINIMUM YIELD STRENGTH OF 50 KSI.

B. OTHER STRUCTURAL STEEL BARS AND PLATES: A529 HAVING A MINIMUM YIELD STRENGTH OF 50 KSI.

C. ROUND ROD (WELDABLE): A1018, HAVING A MINIMUM YIELD STRENGTH OF 50 KSI.

D. SQUARE AND RECTANGULAR HOLLOW STRUCTURAL SECTIONS (HSS): A500, GRADE B HAVING A MINIMUM YIELD STRENGTH OF 46 KSI.
3. FASTENERS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

A.

B. COMMON BOLTS: A307, GRADE A

C. NUTS: A563

D. WASHERS: F436

E. DIRECT TENSION INDICATOR WASHERS: F959

F. THREADED RODS: A36
4. ALL WELDING SHALL BE DONE BY CERTIFIED WELDERS IN ACCORDANCE WITH AWS D.1.1, STRUCTURAL WELDING CODE - STEEL. ALL WELDING ELECTRODES SHALL CONFORM TO THE E-70 SERIES OF THE AWS.
5. ALL BOLTS SHALL BE MINIMUM 3/4" DIAMETER, INSTALLED IN STANDARD HOLES UNLESS OTHERWISE SHOWN OR NOTED.
6. ALL JOINTS USING HIGH STRENGTH BOLTS SHALL BE CONSIDERED PRETENSIONED JOINTS, UNLESS SPECIFICALLY NOTED AS "SNUG TIGHT" ON THE DRAWINGS. ALL HIGH STRENGTH BOLTS IN STANDARD HOLES SHALL BE CONSIDERED TYPE N BOLTS, UNLESS NOTED OTHERWISE. INSTALL BOLTS IN PRETENSIONED JOINTS BY CALIBRATED WRENCH.
7. ALL FIELD CONNECTIONS SHALL BE HIGH STRENGTH BOLTED EXCEPT WHERE DETAILS INDICATE WELDING.
8. NO PENETRATIONS ARE PERMITTED THROUGH STRUCTURAL STEEL MEMBERS UNLESS INDICATED ON STRUCTURAL DRAWINGS OR WITH WRITTEN APPROVAL OF ENGINEER.
9. BRACE STEEL FRAME DURING ERECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANS, METHODS AND SAFETY OF ERECTION OF THE STEEL FRAME.
10. GROUT UNDER STEEL PLATES SHALL BE NON-SHRINK AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 PSI, UNLESS NOTED OTHERWISE.
11. REFER TO SPECIFICATIONS FOR FINISH REQUIREMENTS.
12. PROVIDE HOLES AS REQUIRED FOR ATTACHMENT OF WORK OF OTHER TRADES.

STRUCTURAL TESTS AND SPECIAL INSPECTIONS

1. THE OWNER WILL ENGAGE INDEPENDENT TESTING AND INSPECTION AGENCY TO INSPECT, MONITOR AND/OR TEST THE FOLLOWING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. REPORTS OF INSPECTIONS SHALL BE SUBMITTED TO THE ARCHITECT AND BUILDING OFFICIAL.
2. STRUCTURAL STEEL

A. TESTING AND INSPECTION OF STRUCTURAL STEEL WORK SHALL COMPLY WITH TABLE 1704.3-REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION OF THE IBC.

B. VERIFY WELDING MATERIALS, WELDING PROCEDURES AND QUALIFICATIONS OF WELDERS IN ACCORDANCE WITH AWS D1.1 PRIOR TO START OF FABRICATION.

C. VERIFY MATERIALS FOR STRUCTURAL STEEL, HIGH STRENGTH STEEL BOLTS, NUTS AND WASHERS, AND WELD FILLER MATERIALS.

D. INSPECT INSTALLATION OF HIGH STRENGTH BOLTS IN ACCORDANCE WITH AISC SPECIFICATIONS.

E. INSPECT JOINT FIT-UP PRIOR TO WELDING.

F. INSPECT ALL JOINTS AND CONNECTIONS TO VERIFY COMPLIANCE WITH APPROVED DETAILS SHOWN ON SHOP DRAWINGS AND/OR CONSTRUCTION DOCUMENTS.

SUBMITTALS

SUBMIT THE FOLLOWING IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS:

1. STRUCTURAL STEEL

A. SHOP DRAWINGS SHOWING FABRICATION AND ERECTION DETAILS OF STRUCTURAL STEEL REPAIRS, AND CONNECTION DETAILS.

B. WELDING CERTIFICATES.
2. PFABRIC COVER

A. PRODUCT DATA FOR FABRIC, ACCESSORIES AND ATTACHMENT.

B. SHOP DRAWINGS SHOWING PLANS, ELEVATIONS, SECTIONS AND DETAILS OF FABRIC PANELS AND THEIR ATTACHMENT TO SUPPORTS.

MATERIAL COATING:

1. COATINGS OF TUBES ARE DONE IN LINE, HOT-DIPPED GALVANIZED TO A NOMINAL COATING ZINC WEIGHT OF 0.6 oz/ft (180 g/m) (1.0mil).
2. CHROMATE CONVERSION COATING APPLIED OVER THE GALVANIZED SURFACE TO PROVIDE ADDITIONAL CORROSION PROTECTION.
3. CLEAR ORGANIC POLYMER APPLIED AS THE TOP SURFACE COAT TO RETARD OXIDATION, ENHANCE SURFACE APPEARANCE, AND PROVIDE A PRIMER BASE FOR SUBSEQUENT MOLTEN ZINC APPLIED TO ALL WELDS.

BOLTS IN CONNECTIONS SUBJECT TO TENSION LOADS REQUIRE PRE TENSIONING TO MINIMUM TENSION. VALUES AS SHOWN IN THE TABLE BELOW.

TABLE 'A' BOLT TENSION			
SIZE		GRADE 5 / A325	
in	mm	kips	kN
5/8	16	18	80
3/4	19	28	125
7/8	22	39	174
1.0	25	51	227
1 1/8	29	56	249
1 1/4	32	71	316

TABLE 'B' LISTS THE BOLT CLAMP LOADS WITH SUGGESTED ASSEMBLY TORQUE VALUES

TABLE 'B'						
SIZE		GRADE 5 / A325				
Dia. (inch)	Threads Per Inch	Tensile ksi (Min)	Proof Load lbs	Clamp Load lbs	TORQUE	
					Dry ft - lbs	Lube ft - lbs
3/8	16	120	6600	4950	30	23
7/16	14	120	9050	6780	50	35
1/2	13	120	12100	9050	75	55
5/8	11	120	19200	14400	150	110
3/4	10	120	28400	21300	260	200
1 1/4	7	105	71700	53800	1120	840

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EMMORTON REC. CENTER -  
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SHEET TITLE

GENERAL NOTES

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CONSTRUCTION

ISSUE DATE 05.31.2013

DRAWN DESIGNED CHECKED  
RDM RAB RAB

SCALE SHEET NO.

AS NOTED

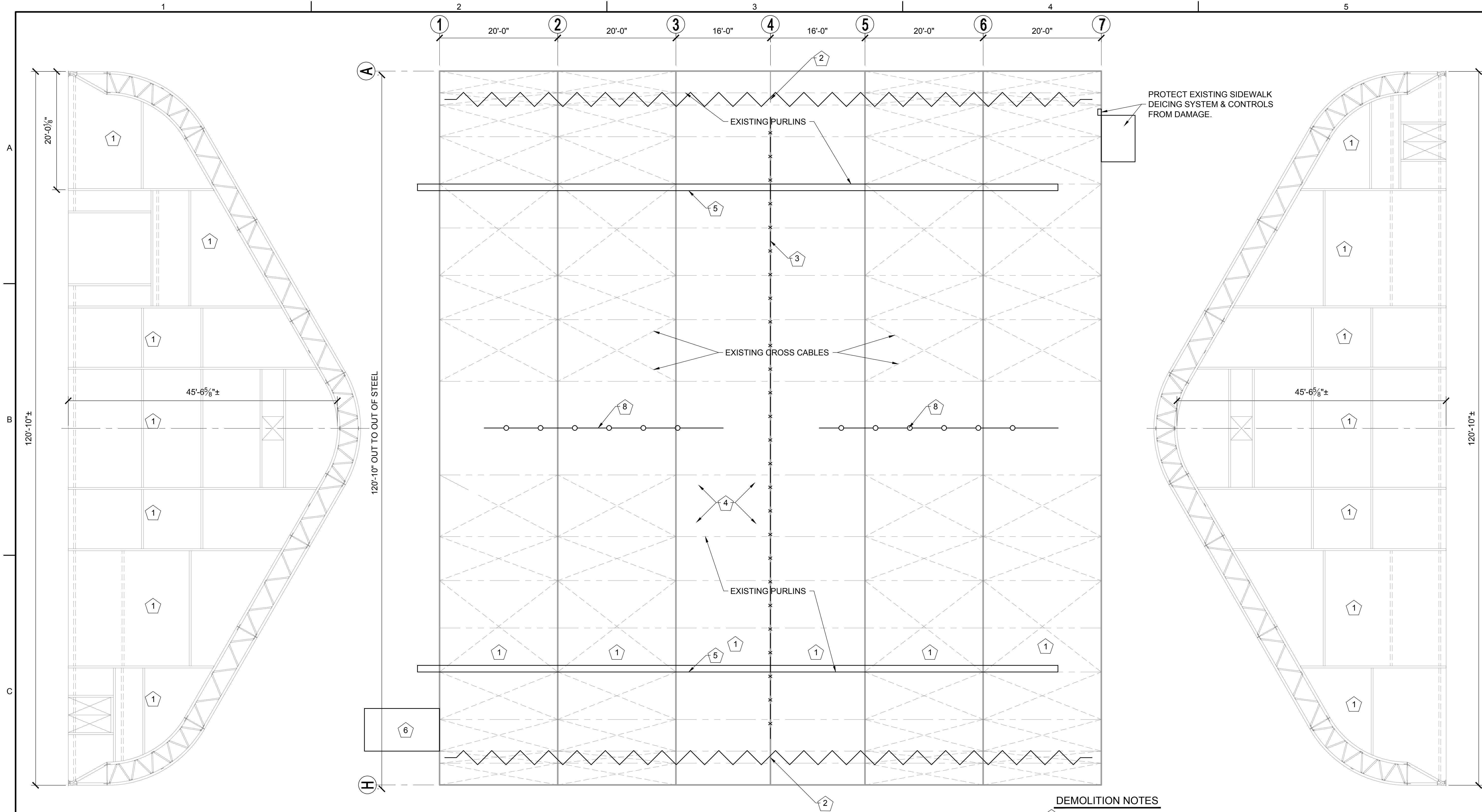
PROJECT NO.

121282.00

DRAWING NO.: 2 OF 6

S001

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# DEMOLITION PLAN

## NOTES

1. PROVIDE PROTECTION FOR TENNIS COURT SURFACE AS NEEDED TO PREVENT DAMAGE.
2. THE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO EXISTING PROPERTY DURING CONSTRUCTION. HE SHALL REPAIR/ REPLACE ANY DAMAGED PROPERTY AT HIS EXPENSE.

## DEMOLITION NOTES

1. REMOVE AND DISPOSE OF EXISTING EXTERIOR PANEL AND LINER PANEL.
2. TEMPORARILY REMOVE AND STORE EXISTING BACK CURTAINS. REINSTALL BACK CURTAINS WHEN PROJECT IS COMPLETE.
3. TEMPORARILY REMOVE AND STORE EXISTING NETS BETWEEN COURTS. REINSTALL NETS WHEN PROJECT IS COMPLETE.
4. TEMPORARILY REMOVE AND STORE, OR PROTECT IN PLACE, EXISTING LIGHTING (20 FIXTURES) AS NEEDED TO COMPLETE PROJECT. REINSTALL LIGHTING WHEN PROJECT IS COMPLETE.
5. TEMPORARILY REMOVE AND STORE EXISTING HEATERS & THERMOSTAT, OR PROTECT IN PLACE, AS NEEDED TO COMPLETE PROJECT. REINSTALL HEATERS WHEN PROJECT IS COMPLETE.
6. TEMPORARILY REMOVE AND STORE EXISTING AWNING STRUCTURE, OR PROTECT IN PLACE, AS NEED TO COMPLETE THE PROJECT. REINSTALL AWNING WHEN PROJECT IS COMPLETE.
7. TEMPORARILY REMOVE AND STORE EXISTING EXIT SIGNS & EMERGENCY LIGHTS, OR PROTECT IN PLACE, AS NEED TO COMPLETE THE PROJECT. REINSTALL EXIT SIGNS & EMERGENCY LIGHTS WHEN PROJECT IS COMPLETE.
8. TEMPORARILY REMOVE AND STORE EXISTING TENNIS NETS & POSTS AS NEED TO COMPLETE THE PROJECT. REINSTALL TENNIS NETS & POSTS WHEN PROJECT IS COMPLETE.

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DEMOLITION PLAN

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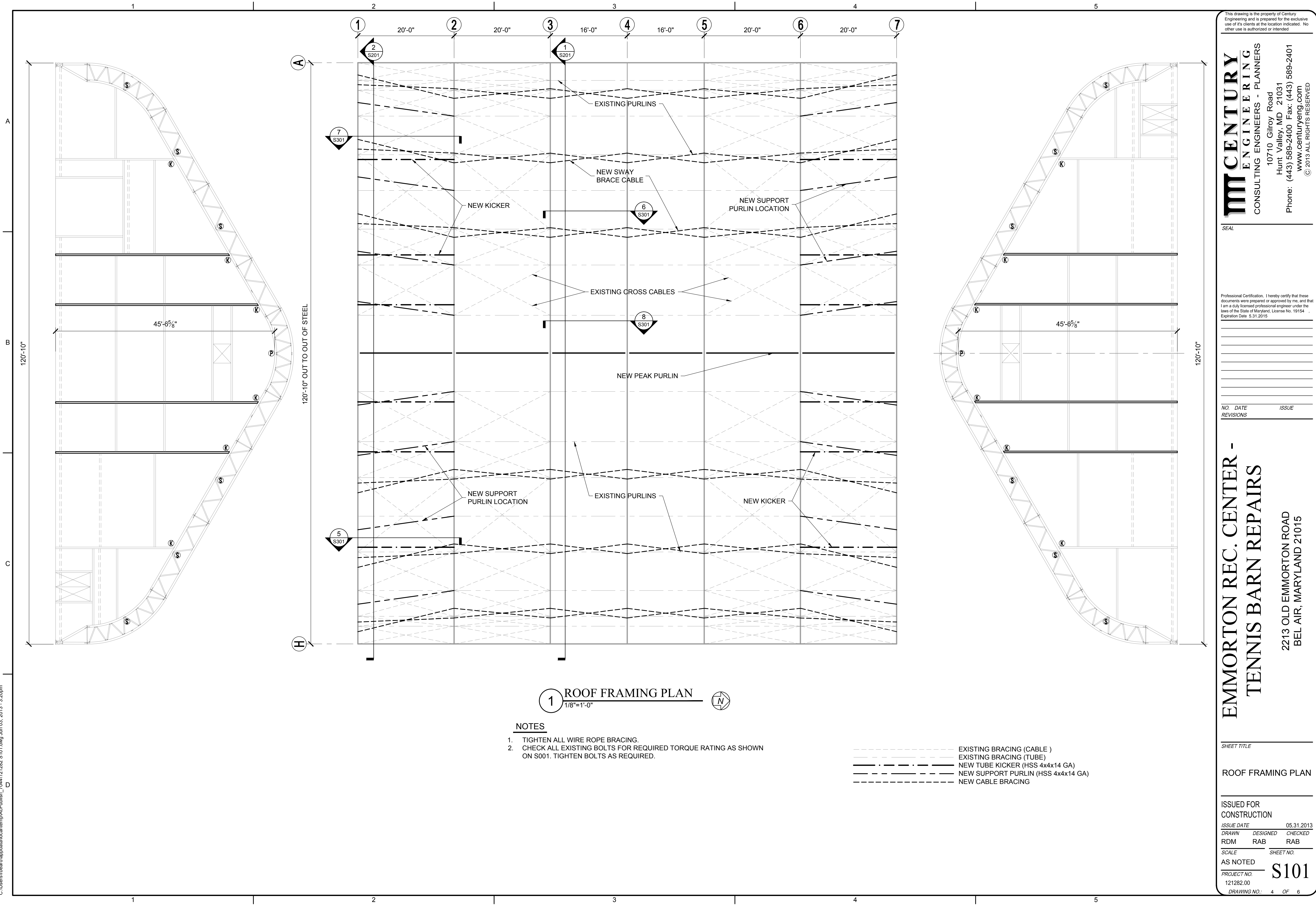
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ROOF FRAMING PLAN

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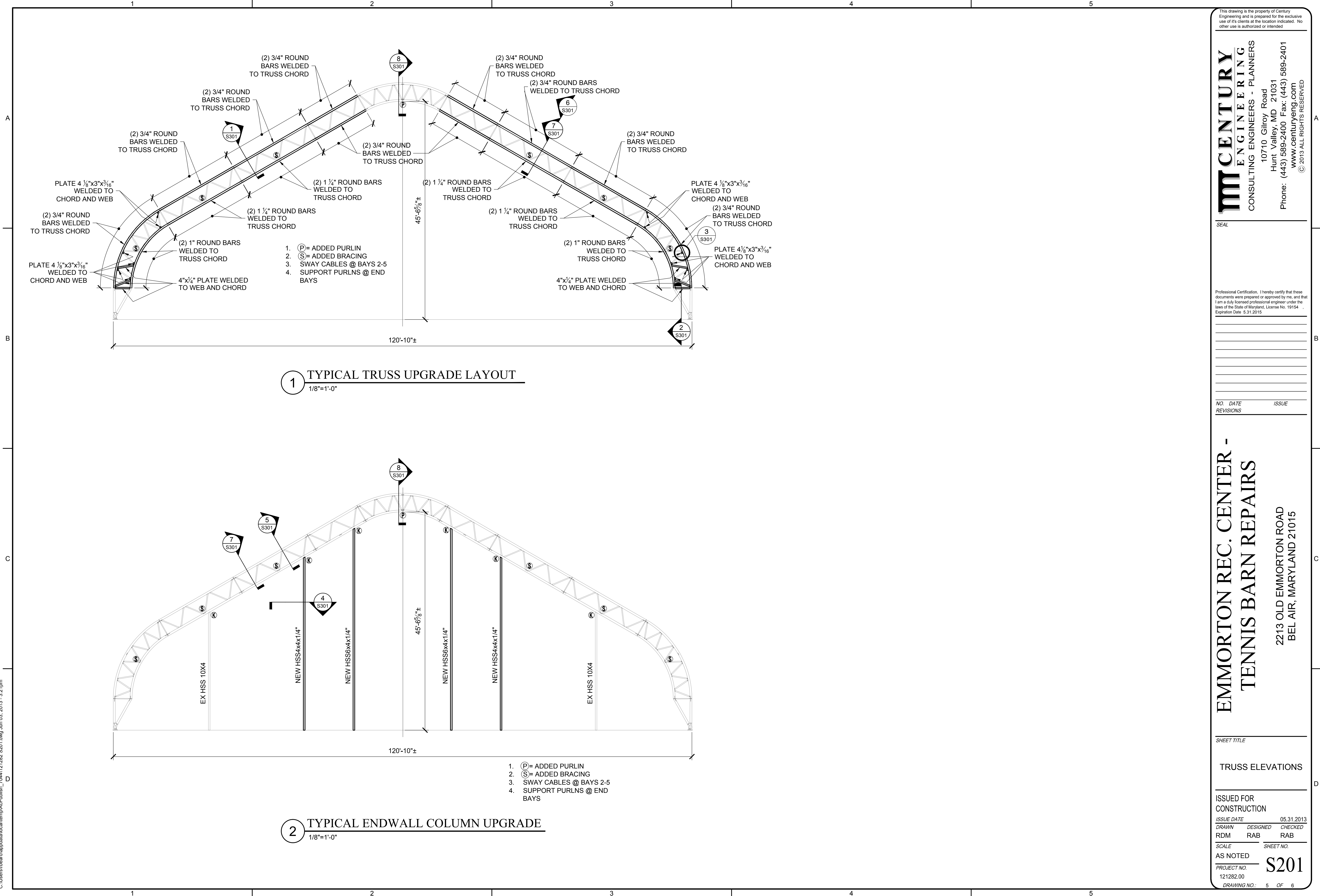
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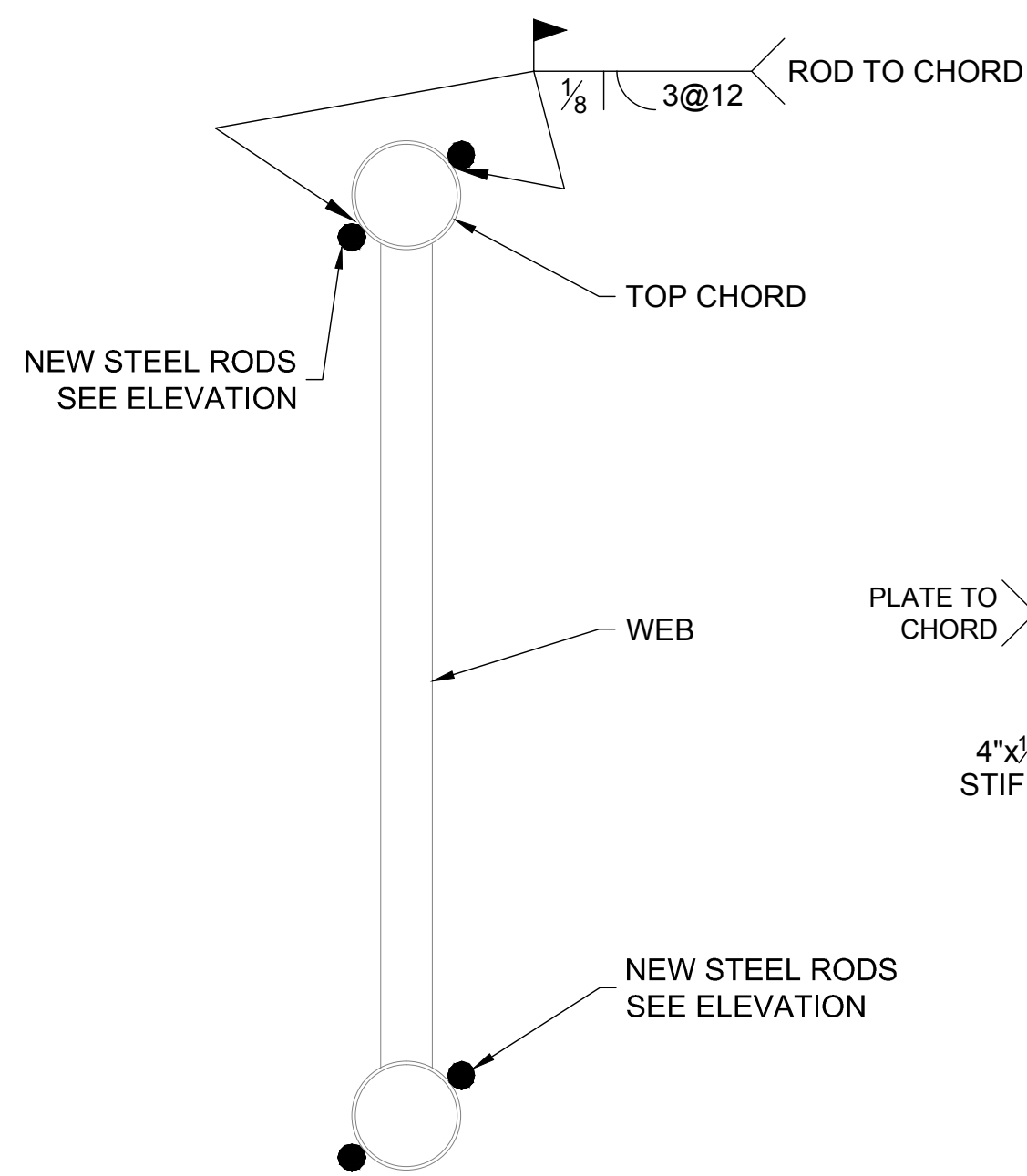
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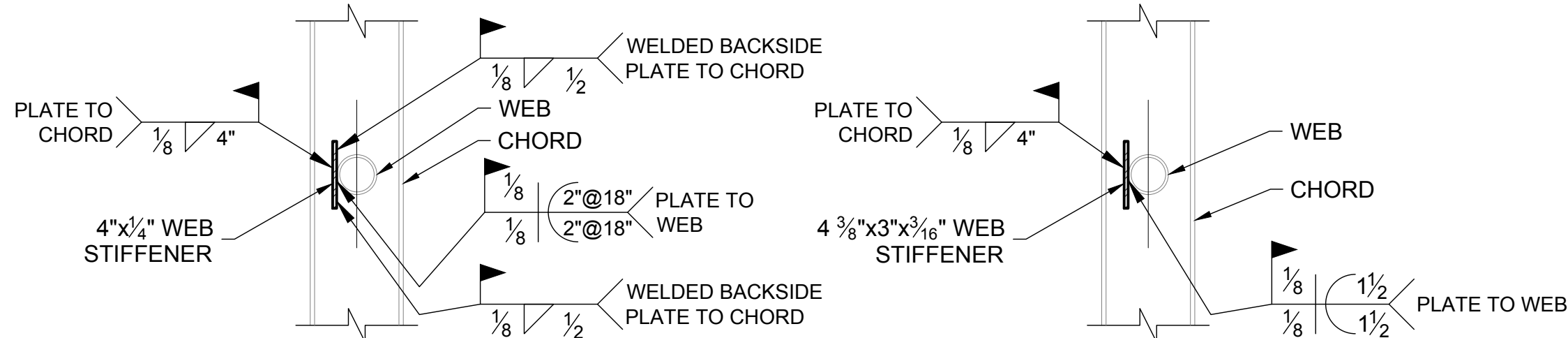
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TRUSS ELEVATIONS

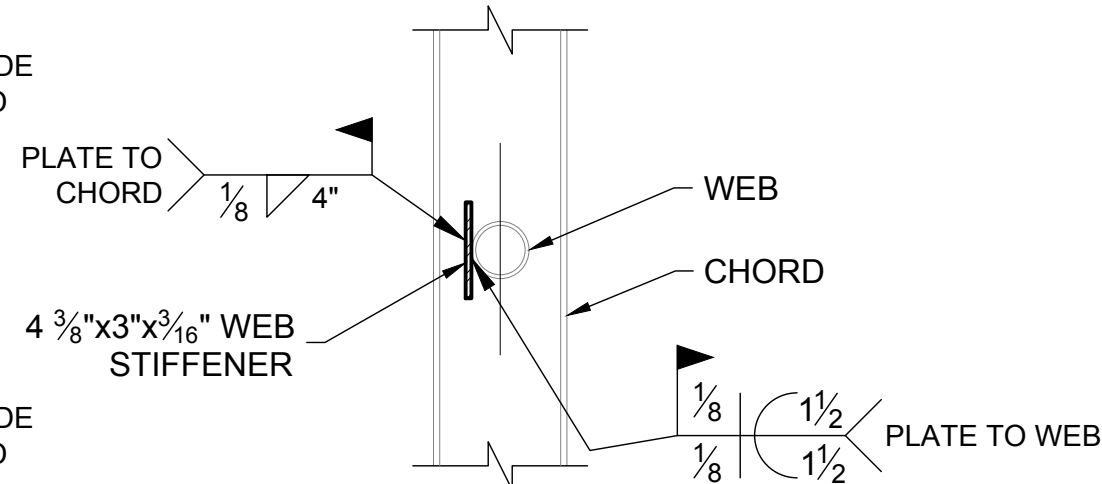
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SCALE AS NOTED SHEET NO.  
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DRAWING NO.: 5 OF 6



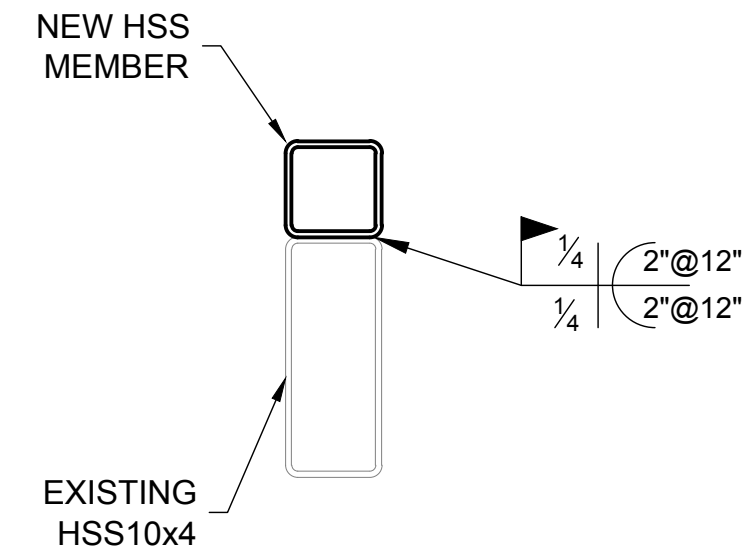
1 FRAME SECTION WELD SPECS  
1 1/2"=1'-0"



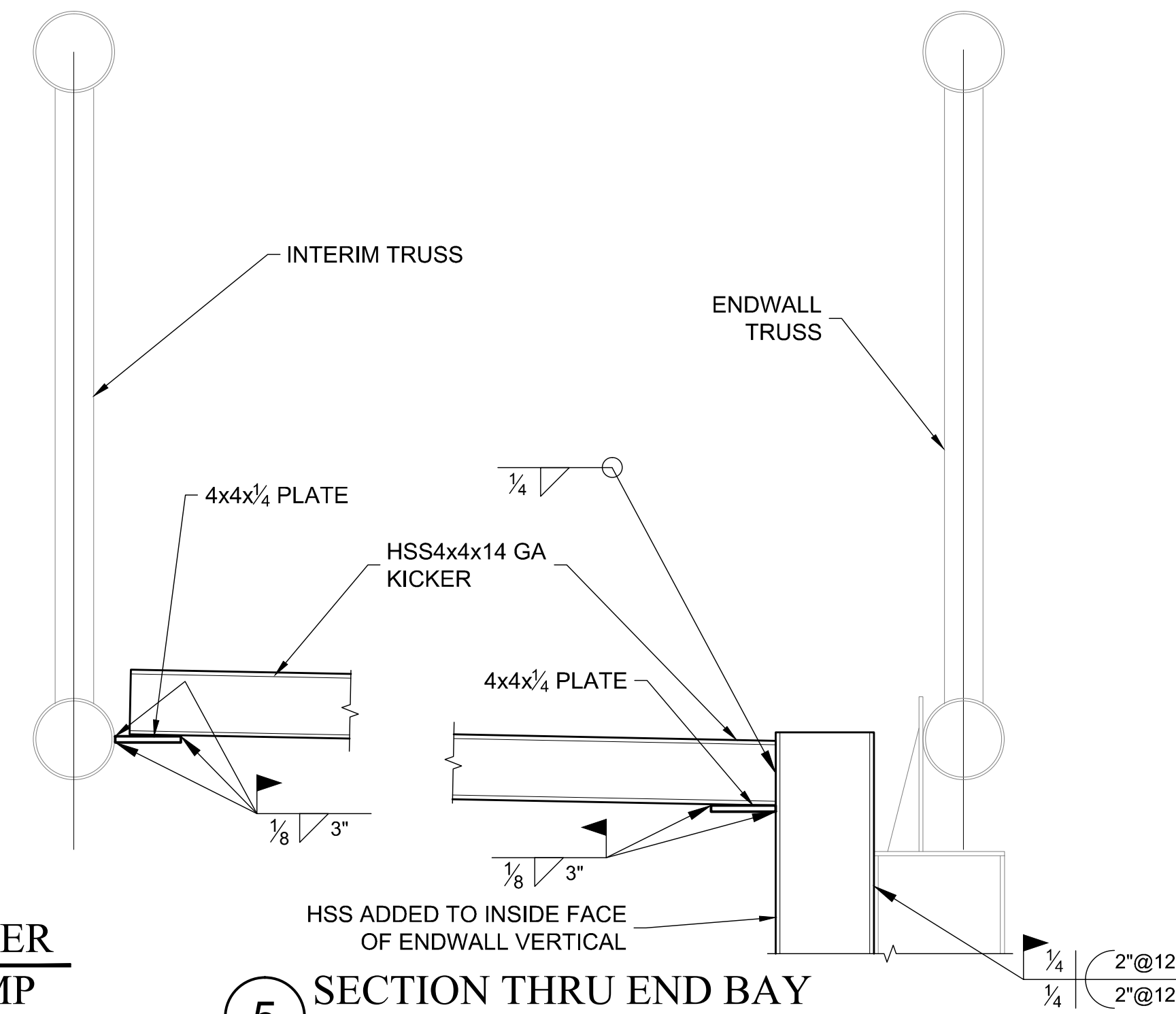
2 WEB STIFFENER SECTION  
1 1/2"=1'-0"



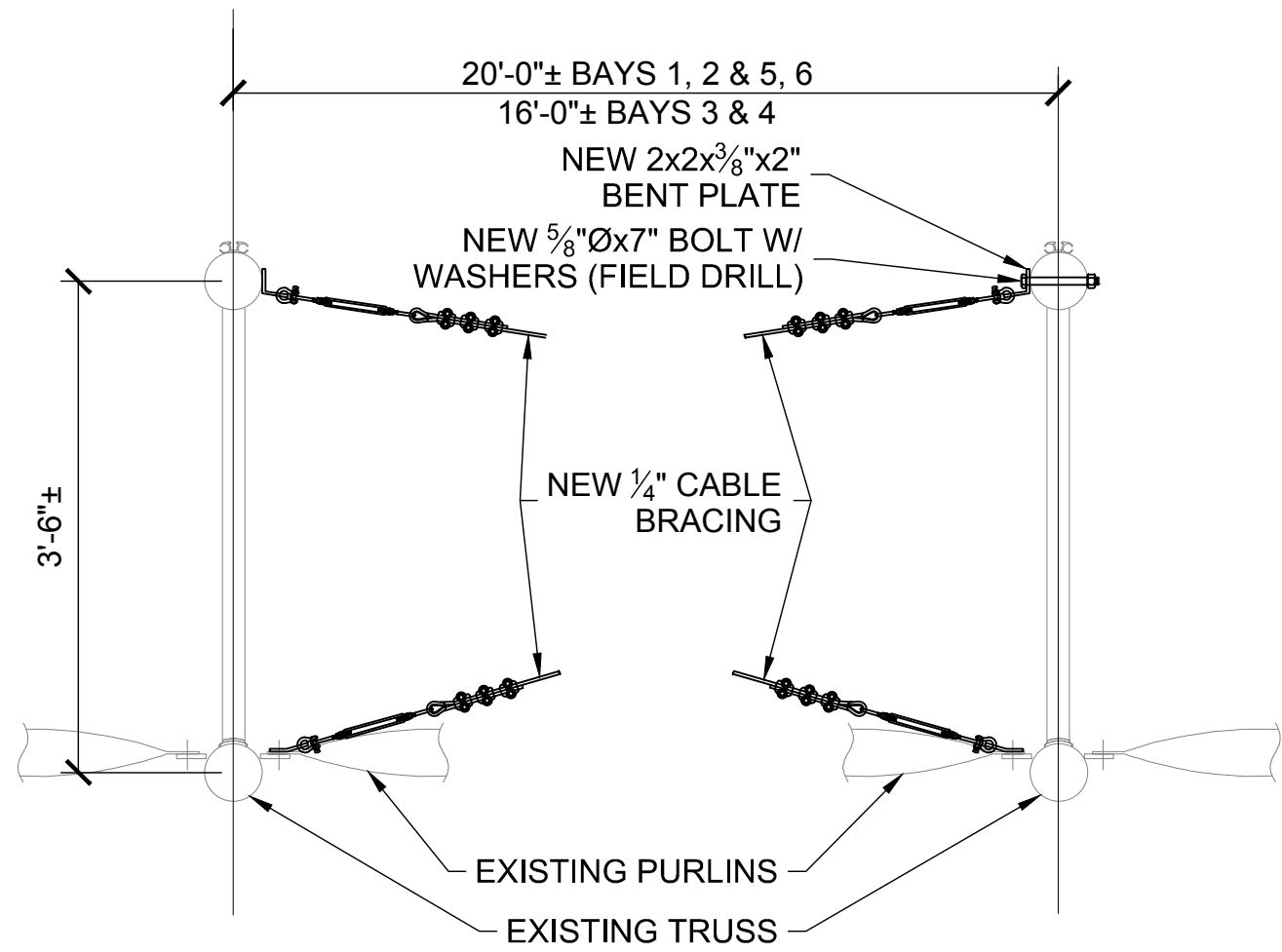
3 WEB STIFFENER SECTION  
1 1/2"=1'-0"



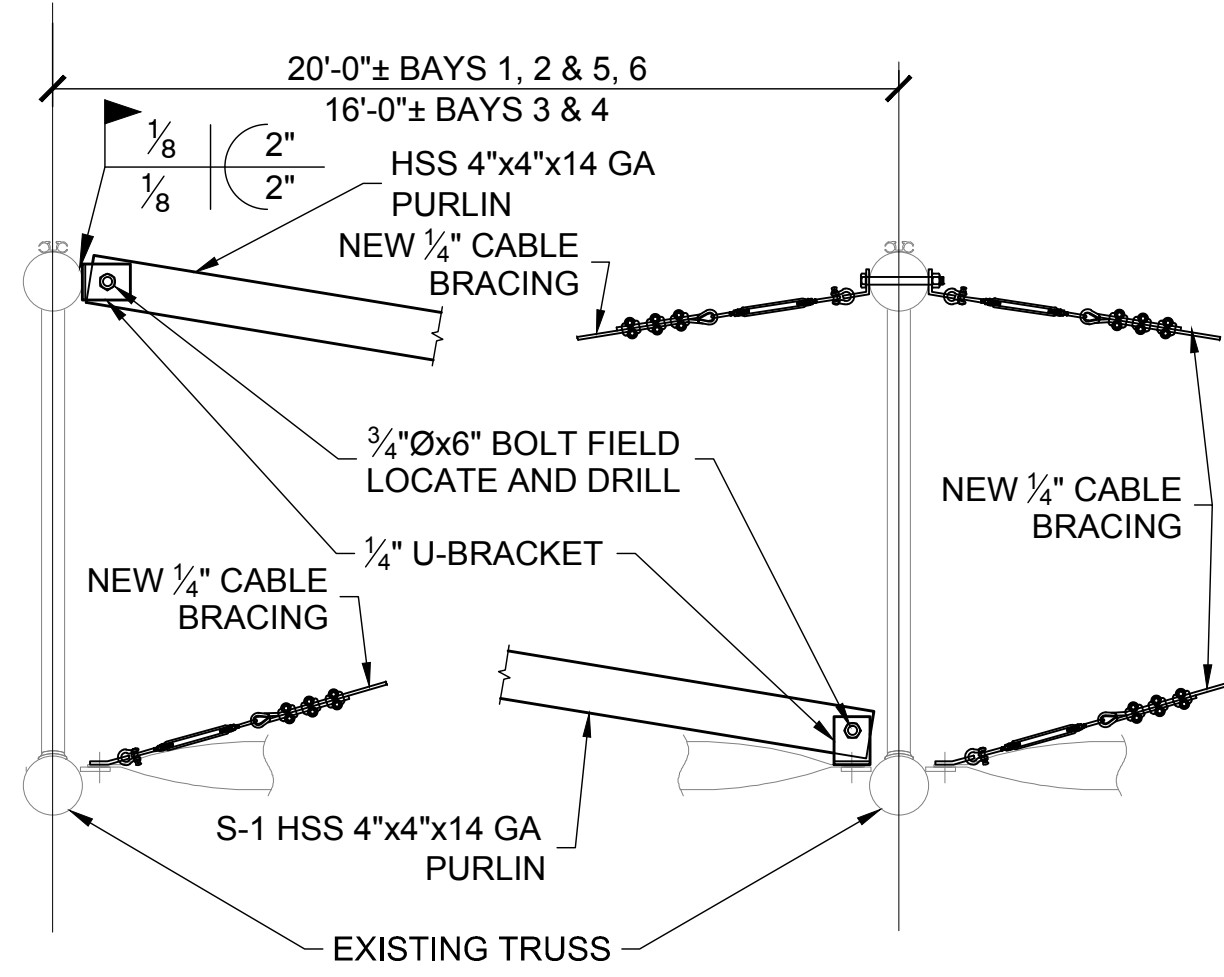
4 PLAN VIEW OF HEADER  
CONNECTION TO JAMB  
3/4"=1'-0"



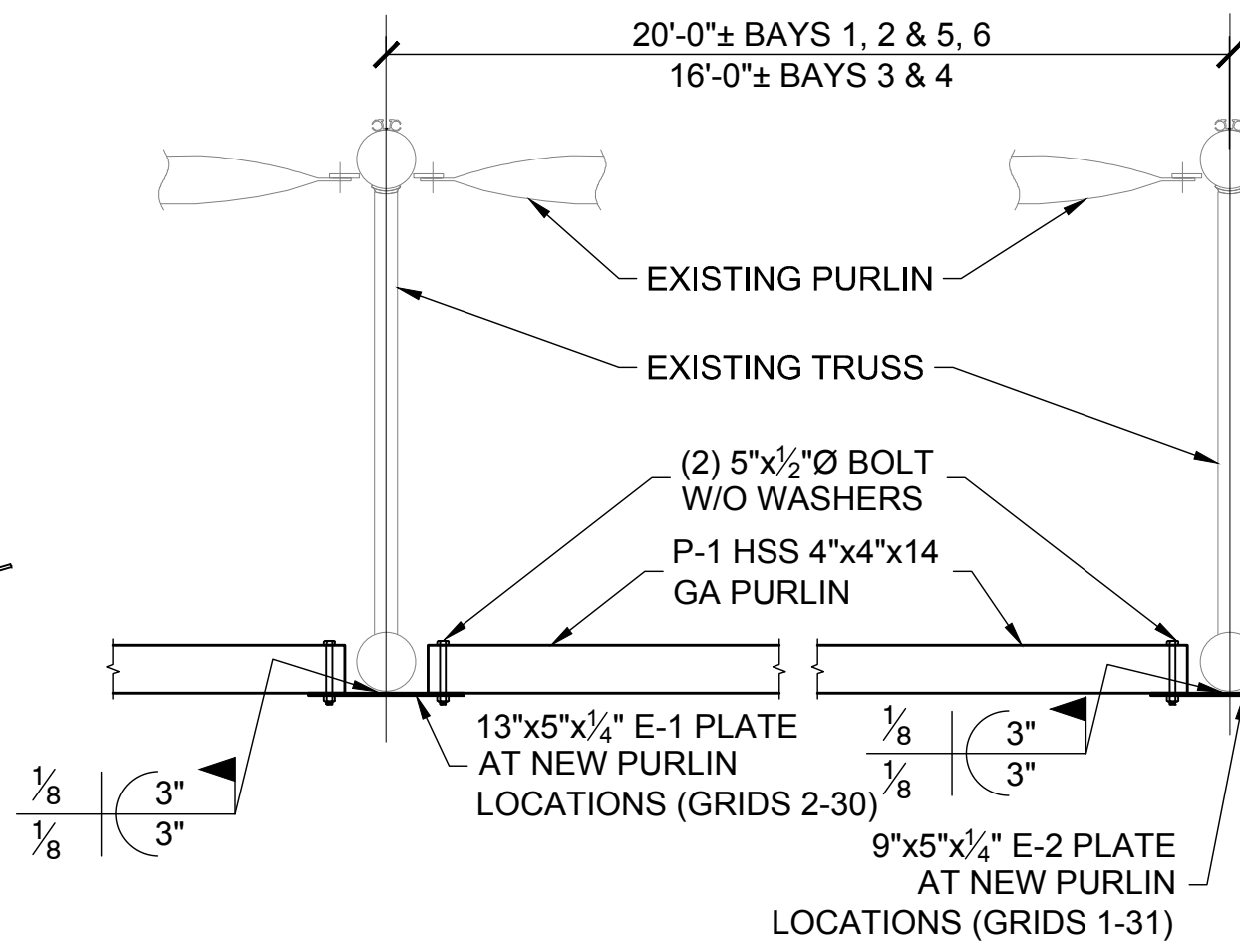
5 SECTION THRU END BAY  
1 1/2"=1'-0"



6 NEW SWAY CABLE BRACING  
3/4"=1'-0"



7 NEW SUPPORT PURLIN  
3/4"=1'-0"



8 NEW RIDGE PURLIN  
3/4"=1'-0"

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DRAWING NO.: 6 OF 6

S301